

We claim:

1. A method of applying a protective coating to a bottom  
 BU Feb 21, 2002 and of protecting bottom edges and corners of chips forming part of the wafer,  
 surface of a wafer, which comprises the steps of:

forming trenches in a top surface of the wafer;

applying a top side dicing tape to the top surface;

grinding the wafer at a bottom surface opposite the top  
 surface and thereby laying open the trenches;

applying a protective material on the bottom surface and  
 filling the trenches; and

hardening the protective material to form a protection layer.

2. A method of dicing a semiconductor wafer, which comprises:

applying a protective coating to a bottom surface of the wafer  
 in accordance with *claim 1*; and further

fixing the protection layer to a mounting tape for fastening  
 the wafer onto a dicing frame;

removing the top side dicing tape;

BU Feb 21, 2002 dicing the wafer into dies; and <sup>(through</sup> the hardened protective material

picking the dies off the mounting tape.

3. A method of applying a protective coating to a bottom  
 and of protecting bottom edges and corners of chips forming part of the wafer,  
 surface of a wafer, which comprises the steps of:

forming trenches in a top surface of the wafer;

applying a top side dicing tape to the top surface;

grinding the wafer at a bottom surface opposite the top  
 surface and thereby laying open the trenches;

applying a glue layer onto a mounting tape; and

mounting the wafer on the mounting tape and causing the glue  
 to fill the trenches.

4. A method of dicing a semiconductor wafer, which comprises:

applying a protective coating to a bottom surface of the wafer  
 in accordance with *claim 3*; and further

removing the top side dicing tape;

dicing the wafer into dies; and  
through the hardened glue

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picking the dies off the mounting tape.

5. A method of applying a protective coating to a bottom  
 surface of a wafer, which comprises the following steps:

applying a protective foil onto a mounting tape; and

mounting a bottom surface of the wafer onto the mounting tape with the protective foil facing the wafer.

6. A method of dicing a semiconductor wafer, which comprises the steps of:

applying a protective coating to a bottom surface of the wafer in accordance with *claim 5*; and further

dicing the wafer including the protective foil into dies; and

picking the dies with the protective foil off the mounting tape.

7. The method according to *claim 6*, wherein the mounting tape is a UV-foil; and the step of picking off the dies includes applying UV-radiation to separate the UV-foil from the protective foil.

8. The method according to one of claims 1 to 4, wherein the trenches are formed by etching.

9. The method according to one of claims 1 to 4, wherein the trenches are formed by laser cutting.



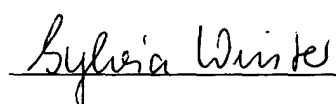
10. The method according to claim 1 or 2, wherein the protective material is a thermoplastic.

11. The method according to claim 1 or 2, wherein the protective material is an epoxy.

12. The method according to claim 1 or 2, wherein the protective material is an Ormocer.

13. The method according to claim 1 or 2, wherein the protective material is a UV-curable polymer.

14. The method according to claim 2, 4, or 6, wherein laser cutting is used to singulate the dies.

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| Barbara Vasquez |  | Date: <u>Feb 21, 2002</u> |
| David Wallis    |  | Date: <u>Feb 23, 2002</u> |
| Sylvia Winter   |  | Date: <u>Feb 26, 2002</u> |